

Applicants: Stephen P. Goff et al.  
U.S. Serial No.: 10/009,433  
Filed: November 8, 2001  
Page 2

**Listing of the Claims:**

1-3. (Previously Canceled)

4. (Currently Amended) A method of determining whether a compound enhances formation of a complex between a p66 subunit polypeptide of HIV-1 reverse transcriptase and a p51 subunit polypeptide of HIV-1 reverse transcriptase which comprises:

- a) contacting a yeast cell with the compound, which cell comprises (i) a first plasmid which expresses a fusion protein comprising the p66 subunit polypeptide of HIV-1 reverse transcriptase, (ii) a second plasmid which expresses a fusion protein comprising the p51 subunit polypeptide of HIV-1 reverse transcriptase, and (iii) a reporter gene which is activated in the presence of a complex between the p66 subunit polypeptide and the p51 subunit polypeptide; ~~and~~
- b) determining a level of activity of the reporter gene in the cell in the presence of the compound; and
- bc) comparing the level of activity of the reporter gene determined in step ~~(a)~~ (b) with a level of activity of the reporter gene determined in the absence of the compound,

wherein an increased level of activity of the reporter gene determined in step ~~(a)~~ (b) compared to the level of activity determined in the absence of the compound indicates that the compound enhances formation of a complex between the p51 subunit polypeptide of HIV-1 reverse transcriptase and the p66 subunit polypeptide of HIV-1 reverse transcriptase.

5-41. (Previously Canceled)

Applicants: Stephen P. Goff et al.  
U.S. Serial No.: 10/009,433  
Filed: November 8, 2001  
Page 3

42. (Previously Presented) A method of making a pharmaceutical composition which comprises:

- a) determining whether a compound not previously known enhances formation of a complex between a p66 subunit polypeptide of HIV-1 reverse transcriptase and a p51 subunit polypeptide of HIV-1 reverse transcriptase by the method of claim 4;
- b) recovering the compound if it is determined to enhance formation; and
- c) admixing the compound with a pharmaceutically acceptable carrier.

43-64. (Previously Canceled)

65. (Previously Presented) The method of claim 4, wherein (a) the fusion protein expressed by the first plasmid comprises a peptide having a DNA binding domain, and (b) the fusion protein expressed by the second plasmid comprises a peptide having a transcription activation domain.

66. (Previously Presented) The method of claim 65, wherein the DNA binding domain is a LexA DNA binding domain.

67. (Previously Presented) The method of claim 66, wherein the peptide having a DNA binding domain comprises LexA amino acid residues 1-87.

68. (Previously Presented) The method of claim 66, wherein the peptide having a DNA binding domain comprises LexA amino acid residues 1-202.

69. (Previously Presented) The method of claim 65, wherein the DNA binding domain is a GAL4 DNA binding domain.
70. (Previously Presented) The method of claim 65, wherein the transcription-activation domain is a GAL4 transcription activation domain.
71. (Previously Presented) The method of claim 70, wherein the peptide having the transcription activation domain comprises GAL4 amino acid residues 768-881.
72. (Previously Presented) The method of claim 65, wherein the transcription activation domain is a VP16 transcription activation domain.
73. (Previously Presented) The method of claim 4, wherein (a) the fusion protein expressed by the first plasmid comprises a peptide having a transcription activation domain, and (b) the fusion protein expressed by the second plasmid comprises a peptide having a DNA binding domain.
74. (Previously Presented) The method of claim 73, wherein the DNA binding domain is a LexA DNA binding domain.
75. (Previously Presented) The method of claim 74, wherein the peptide having a DNA binding domain comprises LexA amino acid residues 1-87.

Applicants: Stephen P. Goff et al.  
U.S. Serial No.: 10/009,433  
Filed: November 8, 2001  
Page 5

76. (Previously Presented) The method of claim 74, wherein the peptide having a DNA binding domain comprises LexA amino acid residues 1-202.
77. (Previously Presented) The method of claim 73, wherein the DNA binding domain is a GAL4 DNA binding domain.
78. (Previously Presented) The method of claim 73, wherein the transcription activation domain is a GAL4 transcription activation domain.
79. (Previously Presented) The method of claim 78, wherein the transcription activation domain comprises GAL4 amino acid residues 768-881.
80. (Previously Presented) The method of claim 73, wherein the transcription activation domain is a VP16 transcription activation domain.
81. (Previously Presented) The method of claim 4, wherein the fusion protein expressed by the first plasmid, the second plasmid or both plasmids comprises a peptide comprising consecutive alanine residues.
82. (Previously Presented) The method of claim 81, wherein the peptide comprising consecutive alanine residues comprises at least 6 alanine residues.
83. (Previously Presented) The method of claim 4, wherein the fusion protein comprises an influenza hemagglutinin (HA) epitope tag.

84. (Previously Presented) The method of claim 4, wherein the reporter gene is a LacZ reporter gene.
85. (Currently Amended) The method of claim 4, wherein (a) the fusion protein expressed by the first plasmid comprises a peptide comprising a LexA protein DNA binding domain, wherein the p66 subunit polypeptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the peptide comprising a LexA protein DNA binding domain; and (b) the fusion protein expressed by the second plasmid comprises a Gal4 peptide corresponding to amino acids 768-881 of Gal4, and an influenza hemagglutinin (HA) epitope tag, which Gal4 peptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the influenza hemagglutinin (HA) epitope tag, which influenza hemagglutinin (HA) epitope tag is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the p51 subunit polypeptide.
86. (Currently Amended) The method of claim 4, wherein (a) the fusion protein expressed by the first plasmid comprises a peptide comprising a LexA protein DNA binding domain, wherein the p66 subunit polypeptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the peptide comprising a LexA protein DNA binding domain; and (b) the fusion protein expressed by the second plasmid comprises a Gal4 peptide corresponding to amino acids 768-881 of Gal4, which Gal4 peptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the p51 subunit polypeptide.
87. (Currently Amended) The method of claim 4, wherein (a) the fusion protein expressed by the first plasmid comprises a LexA

peptide corresponding to amino acid residues 1-87, wherein the LexA peptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the of the p66 subunit polypeptide; and (b) the fusion protein expressed by the second plasmid comprises a Gal4 peptide corresponding to amino acids 768-881 of Gal4, and an influenza hemagglutinin (HA) epitope tag, which Gal4 peptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the influenza hemagglutinin (HA) epitope tag, which influenza hemagglutinin (HA) epitope tag is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the p51 subunit polypeptide.

88. (Currently Amended) The method of claim 4, wherein (a) the fusion protein expressed by the first plasmid comprises a LexA peptide corresponding to amino acid residues 1-87, wherein the LexA peptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the of the p66 subunit polypeptide; and (b) the fusion protein expressed by the second plasmid comprises a Gal4 peptide corresponding to amino acids 768-881 of Gal4, which Gal4 peptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the p51 subunit polypeptide.

89. (Currently Amended) The method of claim 4, wherein (a) the fusion protein expressed by the first plasmid comprises a LexA peptide corresponding to amino acid residues 1-202, and a peptide comprising six consecutive alanine residues, wherein the LexA peptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the peptide comprising six consecutive alanine residues, wherein the peptide comprising six consecutive alanine residues is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the p66 subunit polypeptide; and (b)

the fusion protein expressed by the second plasmid comprises a Gal4 peptide corresponding to amino acids 768-881 of Gal4, which Gal4 peptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the p51 subunit polypeptide.

90. (Currently Amended) The method of claim 4, wherein (a) the fusion protein expressed by the first plasmid comprises a LexA peptide corresponding to amino acid residues 1-202, and a peptide comprising six consecutive alanine residues, wherein the LexA peptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the peptide comprising six consecutive alanine residues, wherein the peptide comprising six consecutive alanine residues is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the p66 subunit polypeptide; and (b) the fusion protein expressed by the second plasmid comprises a Gal4 peptide corresponding to amino acids 768-881 of Gal4, and an influenza hemagglutinin (HA) epitope tag, which Gal4 peptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the influenza hemagglutinin (HA) epitope tag, which influenza hemagglutinin (HA) epitope tag is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the p51 subunit polypeptide.

91. (Currently Amended) The method of claim 4, wherein (a) the fusion protein expressed by the first plasmid comprises a Gal4 peptide corresponding to amino acids 768-881 of Gal4, an influenza hemagglutinin (HA) epitope tag, and a peptide comprising six consecutive alanine residues, wherein the Gal4 peptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the influenza hemagglutinin (HA) epitope tag, wherein the influenza hemagglutinin (HA) epitope tag is

bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the peptide comprising six consecutive alanine residues, wherein the peptide comprising six consecutive alanine residues is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the p66 subunit polypeptide; and (b) the fusion protein expressed by second plasmid comprises a peptide comprising a LexA protein DNA binding domain, wherein the p51 subunit polypeptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the peptide comprising a LexA protein DNA binding domain.

92. (Currently Amended) The method of claim 4, wherein (a) the fusion protein expressed by the first plasmid comprises a Gal4 peptide corresponding to amino acids 768-881 of Gal4, an influenza hemagglutinin (HA) epitope tag, and a peptide comprising six consecutive alanine residues, wherein the Gal4 peptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the influenza hemagglutinin (HA) epitope tag, wherein the influenza hemagglutinin (HA) epitope tag is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the peptide comprising six consecutive alanine residues, wherein the peptide comprising six consecutive alanine residues is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the p66 subunit polypeptide; and (b) the fusion protein expressed by second plasmid comprises a peptide comprising a LexA protein DNA binding domain, wherein peptide comprising a LexA protein DNA binding domain is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the p51 subunit polypeptide.



93. (Currently Amended) The method of claim 4, wherein (a) the fusion protein expressed by the first plasmid comprises a Gal4 peptide corresponding to amino acids 768-881 of Gal4, an influenza hemagglutinin (HA) epitope tag, and a peptide comprising six consecutive alanine residues, wherein the Gal4 peptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the influenza hemagglutinin (HA) epitope tag, wherein the influenza hemagglutinin (HA) epitope tag is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the peptide comprising six consecutive alanine residues, wherein the peptide comprising six consecutive alanine residues is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the p66 subunit polypeptide; and (b) the fusion protein expressed by second plasmid comprises a peptide comprising a Gal4 protein DNA binding domain, which peptide comprising a Gal4 protein DNA binding domain is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the p51 subunit polypeptide.
94. (Currently Amended) The method of claim 4, wherein (a) the fusion protein expressed by the first plasmid comprises a Gal4 peptide corresponding to amino acids 768-881 of Gal4, wherein the Gal4 peptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the p66 subunit polypeptide; and (b) the fusion protein expressed by second plasmid comprises a peptide comprising a LexA protein DNA binding domain, wherein the p51 subunit polypeptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the peptide comprising a LexA protein DNA binding domain.
95. (Currently Amended) The method of claim 4, wherein (a) the fusion protein expressed by the first plasmid comprises a Gal4

peptide corresponding to amino acids 768-881 of Gal4, wherein the Gal4 peptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the p66 subunit polypeptide; and (b) the fusion protein expressed by second plasmid comprises a peptide comprising a LexA protein DNA binding domain, which peptide comprising a LexA protein DNA binding domain is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the p51 subunit polypeptide.

96. (Currently Amended) The method of claim 4, wherein (a) the fusion protein expressed by the first plasmid comprises a Gal4 peptide corresponding to amino acids 768-881 of Gal4, wherein the Gal4 peptide is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the p66 subunit polypeptide; and (b) the fusion protein expressed by second plasmid comprises a peptide comprising a Gal4 protein DNA binding domain, which peptide comprising a Gal4 protein DNA binding domain is bound at its C-terminal amino acid to ~~the~~ a N-terminal amino acid of the p51 subunit polypeptide.

97. (Previously Presented) A method of enhancing formation of a complex between a p51 subunit polypeptide of HIV-1 reverse transcriptase and a p66 subunit polypeptide of HIV-1 reverse transcriptase, with a compound not previously known which comprises:

- a) contacting a yeast cell with the compound, which cell comprises (i) a first plasmid which expresses a fusion protein comprising the p66 subunit polypeptide of HIV-1 reverse transcriptase, (ii) a second plasmid which expresses a fusion protein comprising the p51 subunit polypeptide of HIV-1 reverse transcriptase, and (iii) a

reporter gene which is activated in the presence of a complex between the p66 subunit polypeptide and the p51 subunit polypeptide, and determining a level of activity of the reporter gene in the cell in the presence of the compound;

- b) comparing the level of activity of the reporter gene determined in step (a) with a level of activity of the reporter gene determined in the absence of the compound, wherein an increased level of activity of the reporter gene determined in step (a) indicates that the compound enhances formation of a complex between the p51 subunit polypeptide of HIV-1 reverse transcriptase and the p66 subunit polypeptide of HIV-1 reverse transcriptase;
- c) contacting either (1) the p51 subunit polypeptide, (2) the p66 subunit polypeptide, or (3) both the p51 subunit polypeptide and the p66 subunit polypeptide, with an effective amount of the compound determined to enhance formation of the complex in step (c), so to thereby enhance formation of a complex between the p51 subunit polypeptide of HIV-1 reverse transcriptase and a p66 subunit polypeptide of HIV-1 reverse transcriptase.

98. (Previously Presented) The method of claim 97, wherein the p51 subunit polypeptide of HIV-1 reverse transcriptase and the p66 subunit polypeptide of HIV-1 reverse transcriptase are present in a subject and the contacting is effected by administering the compound to the subject.

99. (Previously Presented) The method of claim 98, wherein the compound is administered orally, intravenously, subcutaneously, intramuscularly, topically or by liposome-mediated delivery.

100. (Previously Presented) The method of claim 98, wherein the subject is a human being, a primate, an equine, an avian, a bovine, a porcine, a canine, a feline or a mouse.
101. (Previously Presented) The method of claim 98, wherein the effective amount of the compound is between about 1mg and about 50mg per kg body weight of the subject.
102. (Previously Presented) The method of claim 101, wherein the effective amount of the compound is between about 2mg and about 40mg per kg body weight of the subject.
103. (Previously Presented) The method of claim 102, wherein the effective amount of the compound is between about 3mg and about 30mg per kg body weight of the subject.
104. (Previously Presented) The method of claim 103, wherein the effective amount of the compound is between about 4mg and about 20mg per kg body weight of the subject.
105. (Previously Presented) The method of claim 104, wherein the effective amount of the compound is between about 5mg and about 10mg per kg body weight of the subject.
106. (Previously Presented) The method of claim 105, wherein the compound is administered at least once per day.
107. (Previously Presented) The method of claim 98, wherein the compound is administered daily.

Applicants: Stephen P. Goff et al.  
U.S. Serial No.: 10/009,433  
Filed: November 8, 2001  
Page 14

108. (Previously Presented) The method of claim 98, wherein the compound is administered every other day.
109. (Previously Presented) The method of claim 98, wherein the compound is administered every 6 to 8 days.
110. (Previously Presented) The method of claim 98, wherein the compound is administered weekly.
111. (Currently Canceled)
112. (Currently Canceled).